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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/581,994

06/16/2006

Masashi Sato

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ALEXANDRIA, VA 22320-4850

EXAMINER

KOLLIAS, ALEXANDER C

ART UNIT

PAPER NUMBER

1796

NOTIFICATION DATE

DELIVERY MODE

07/01/2010

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/581,994	Applicant(s) SATO ET AL.	
	Examiner ALEXANDER C. KOLLIAS	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 June 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 5 and 8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 5 and 8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6/4/2010 has been entered.

2. It is noted that claims 5 and 8 are pending and have been amended to recite the limitations of claims 1 and 4; claims 1-4, 6-7, and 9 have been canceled. Although claims 5 and 8 have been amended, the prior art of record, Sato, Lewin and Nakamura et al remain relevant references against the claims in the rejections set forth below.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.

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2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).
6. Claims 5 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato et al (US 2003/0207979) in view of Lewin (US 2002/0013393) and Nakamura et al (US 2003/0207106).

Regarding claim 5, Sato et al discloses an insulated wire comprising a flame retardant resin composition. The fire retardant resin composition is disclosed as comprising 30 to 90 parts by weight polyethylene having a melt flow rate of less than 5 g/10 min and a density of at least 0.30 g/cm³ (disclosed component a), about 5 to 65 parts by weight of an olefin type polymer containing intra molecular oxygen atoms such as (component b1), 5 to 40 parts by mass of least one polymer such as acid modified olefin polymer, acid modified styrene thermoplastic, acid modified polyethylene, etc (components c1-c4) and 30 to 250 parts by mass of a metal hydroxide such as aluminum or magnesium hydroxides (Page 1 [0024]-[0028], Page 2 [0029]-[0034], Page 4 [0107]-[0110]). It is noted that the amount of metal hydroxide or hydrate disclosed by the

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reference is identical to that recited in claim 5. Further, it is noted that the density and melt flow rate of the polyethylene are within the ranges of 5 g/10 min or less and 0.90 g/cm³ or more presently recited in claim 5. Given that the reference discloses that acid modified styrene, the condition that at least one polymer (B) is modified by acid recited in claim 1 is met. Polyethylene comprises 30 to 90 parts by mass in the total of 100 parts by mass (30 to 90 wt %) while the acid modified styrene comprises 10 to 40 parts by mass in the total of 100 parts by mass (10 to 40 wt %) comprising components (a) (b1) and (c) (Page 3 [0093] and Page 4 [0105]). Given that the reference discloses acid modified styrene it is clear that the disclosed resins meet the proviso that compositions comprises at least one resin modified by acid. It is noted that the amounts of the resin are with the range of 30 to 90 wt % of polyethylene and 70 to 10 wt % of resin (B) recited in claim 1. The reference that the composition is cross-linked (Page 2 [0035]). Given that the reference does not disclose halogenated compounds added to the composition, it is clear that the coating composition is non-halogenated. Additionally, Sato teaches that the composition comprises fire retardant adjuvants such as zinc borate (Page 4 [0111]).

While Sato does discloses the use of zinc compounds in the fire retardant composition, the reference does not disclose the specific zinc compound or amounts thereof as required by the present claims

Lewin discloses a polymeric flame retardant composition comprising sulfur compounds such as zinc sulfide which are added to the compositions in amounts of 1-3 wt % in order to obtain a pronounce flame retardancy (Page 1 [0009]-[0010], Page 2 [0011]). At combustion zinc sulfide is oxidized to higher valency products and interact with the polymer to render a flame-retarding surface barrier (Page 2 [0011]). It is noted that the amounts of 1 to 3 wt % zinc sulfide

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in within the amounts of zinc compound, on a weight percent basis, i.e. 0.76 to 5.40 wt % of a zinc compound, recited in claim 5

Given that both Sato and Lewin are drawn to fire retardant polymeric compositions, in light of the particular advantages provided by the use and control of zinc sulfide and amounts thereof as taught by Lewin, it would therefore have been obvious to one of ordinary skill in the art to include such compounds in the composition disclosed by Sato with a reasonable expectation of success

The combined disclosures of Sato and Nakamura teach disclose all the claim limitations as set forth above. However, the references do not disclose a wiring harness comprising a single wire bundle containing non-halogenated insulated wires and a wiring harness protective material for covering the wire bundle comprising vinyl chloride as the base material.

Nakamura et al discloses a wire harness material comprising a substrate made of non-halogen based resin and a wire bundle comprising wires coated with a non-halogen based resin or a bundle comprising a mixture of non-halogen coated and polyvinyl chloride coated wires (Page 3 [0040]). The wire harness comprises a tape base painted with adhesive which prevents plasticizers and adhesive adjuvants from migrating; thereby the wire harness obtains a stable and durable cable quality (Page 3 [0040]).

Given that both Sato and Nakamura et al are drawn to non-halogenated coatings for wires, in light of the particular advantages provided by the use and control of the wire harness and cable bundles as taught by Nakamura et al, it would therefore have been obvious to one of ordinary skill in the art to include such wire harnesses and wire bundles comprising the coating disclosed by Sato with a reasonable expectation of success.

Regarding claim 8, Sato et al discloses an insulated wire and a wiring harness comprising a flame retardant resin composition. The fire retardant resin composition is disclosed as comprising 30 to 90 parts by weight polyethylene having a melt flow rate of less than 5 g/10 min and a density of at least 0.30 g/cm^3 (disclosed component a), about 5 to 65 parts by weight of an olefin type polymer containing intra molecular oxygen atoms such as (component b1), 5 to 40 parts by mass of least one polymer such as acid modified olefin polymer, acid modified styrene thermoplastic, acid modified polyethylene, etc (components c1-c4) and 30 to 250 parts by mass of a metal hydroxide such as aluminum or magnesium hydroxides (Page 1 [0024]-[0028], Page 2 [0029]-[0034], Page 4 [0107]-[0110]). It is noted that the amount of metal hydroxide or hydrate disclosed by the reference is identical to that recited in claim 5. Further, it is noted that the density and melt flow rate of the polyethylene are within the ranges of 5 g/10 min or less and 0.90 g/cm^3 or more presently recited in claim 8. Given that the reference discloses that acid modified styrene, the condition that at least one polymer (B) is modified by acid recited in claim 8 is met. Polyethylene comprises 30 to 90 parts by mass in the total of 100 parts by mass (30 to 90 wt %) while the acid modified styrene comprises 10 to 40 parts by mass in the total of 100 parts by mass (10 to 40 wt %) comprising components (a) (b1) and (c) (Page 3 [0093] and Page 4 [0105]). Given that the reference discloses acid modified styrene it is clear that the disclosed resins meet the proviso that composition comprises at least one resin modified by acid. It is noted that the amounts of the resin are with the range of 30 to 90 wt % of polyethylene and 70 to 10 wt % of resin (B) recited in claim 1. The reference discloses that the composition is cross-linked by radiation, i.e., electron beam irradiation (Page 2 [0035]). Given that the reference does not

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disclose halogenated compounds added to the composition, it is clear that the coating composition is non-halogenated. Additionally, Sato teaches that the composition comprises fire retardant adjuvants such as zinc borate (Page 4 [0111]).

While Sato does disclose the use of zinc compounds in the fire retardant composition, the reference does not disclose the specific zinc compound or amounts thereof as required by the present claims

Lewin discloses a polymeric flame retardant composition comprising sulfur compounds such as zinc sulfide which are added to the compositions in amounts of 1-3 wt % in order to obtain a pronounced flame retardancy (Page 1 [0009]-[0010], Page 2 [0011]). At combustion zinc sulfide is oxidized to higher valency products and interact with the polymer to render a flame-retarding surface barrier (Page 2 [0011]). It is noted that the amounts of 1 to 3 wt % zinc sulfide in within the amounts of zinc compound, on a weight percent basis, i.e. 0.76 to 5.40 wt % of a zinc compound, recited in claim 8.

Given that both Sato and Lewin are drawn to fire retardant polymeric compositions, in light of the particular advantages provided by the use and control of zinc sulfide and amounts thereof as taught by Lewin, it would therefore have been obvious to one of ordinary skill in the art to include such compounds in the composition disclosed by Sato with a reasonable expectation of success

The combined disclosures of Sato and Nakamura teach disclose all the claim limitations as set forth above. However, the references do not disclose a wiring harness comprising a single wire bundle containing non-halogenated insulated wires and a wiring harness protective material for covering the wire bundle comprising vinyl chloride as the base material.

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Nakamura et al discloses a wire harness material comprising a substrate made of non-halogen based resin and a wire bundle comprising wires coated with a non-halogen based resin or a bundle comprising a mixture of non-halogen coated and polyvinyl chloride coated wires (Page 3 [0040]). The wire harness comprises a tape base painted with adhesive which prevents plasticizers and adhesive adjuvants from migrating; thereby the wire harness obtains a stable and durable cable quality (Page 3 [0040]).

Given that both Sato and Nakamura et al are drawn to non-halogenated coatings for wires, in light of the particular advantages provided by the use and control of the wire harness and cable bundles as taught by Nakamura et al, it would therefore have been obvious to one of ordinary skill in the art to include such wire harnesses and wire bundles comprising the coating disclosed by Sato with a reasonable expectation of success.

Response to Arguments

7. Applicant's arguments filed 6/4/2010 have been fully considered but they are not persuasive.

8. Applicants argue that the experimental evidence presented in the Specification is commensurate in scope with the scope of the present claims because one of ordinary skill in the art would understand that magnesium hydroxide and acryl silane are representative of numerous other metallic hydrates and coupling agent. However, as set forth in MPEP 716.02 (d) I, "[T]he nonobviousness of a broader claimed range can be supported by evidence based on unexpected results from testing a narrower range if one of ordinary skill in the art would be

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able to determine a trend in the exemplified data which would allow the artisan to reasonably extend the probative value thereof. In *re Kollman*, 595 F.2d 48, 201 USPQ 193 (CCPA 1979)”. In the present Application, there is no evidence that magnesium hydroxide and acryl silane are exemplary of an entire class of metallic hydrates and organo functional coupling agents.

9. Applicants argue that the compositional differences between Example 6 and Comparative Examples 15-17 would not have any material effect on the respective compatibilities and that this fact would be recognized by ordinary skill in the art. Further Applicants argue that the use of modified EVA, acryl silane, metallic hydrate, and phosphorous antioxidant would be understood by one of ordinary skill in the art as not affecting the compatibility of the presently claimed composition. However, it firstly is noted that there is no evidence of record supporting this position. Further it is noted that “the arguments of counsel cannot take the place of evidence in the record”, *In re Schulze*, 346 F.2d 600, 602, 145 USPQ 716, 718 (CCPA 1965). It is the examiner’s position that the arguments provided by the applicant regarding the above compound affecting compatibility must be supported by a declaration or affidavit. As set forth in MPEP 716.02(g), “the reason for requiring evidence in a declaration or affidavit form is to obtain the assurances that any statements or representations made are correct, as provided by 35 U.S.C. 24 and 18 U.S.C. 1001”.

10. As evidence of their position that neither a specific metallic hydrate nor specific coupling agent would have any material effect on compatibility, Applicants point to Page 18 Lines 16-21

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of the present Specification. However, the pertinent part of Page 18 drawn to compatibility states the following "[I]n particular, compatibility... is exerted by using (A) the polyethylene specified by the specific melt flow rate (MFR) and the specific density and (D) the zinc compound, preferably, zinc sulfide". To this end, regarding polyethylene Sato discloses that a composition comprising polyethylene which possesses a melt flow rate of 5 g/10 min or less and a density of at least 0.930, which is identical MFR and density presently claimed. Further, the reference elucidates that if the density of the polyethylene is less than 0.930, hardness and wear resistance of the composition is lowered. With respect to the MFR, the reference discloses that if MFR exceeds 5 g/10 min, the formability of the composition is lowered. (Page 3 [0088]). That is to say, Sato already recognizes the criticality of controlling the material properties of polyethylene in the wire insulation. Further, with respect to zinc compounds Sato discloses the use of zinc compounds as flame retardant adjuvant, while Lewin recognizes the criticality of utilizing specific zinc sulfide. In particular Lewin discloses that zinc sulfide provides pronounced flame retardancy given that during combustion it is oxidized to higher valency products which interact with the polymer to render a flame-retarding surface barrier.

11. Applicants argue unexpected results regarding improved compatibility of non-halogenated wire insulation containing zinc sulfide compared to non-halogenated wire insulation compositions which do not contain zinc sulfide. As evidence of improved compatibility, Applicants point to the compatibility results obtained for Comparative Examples 15-17 and Inventive Example 6. However, Applicant's arguments are not found to be persuasive for the reasons set forth below.

It is the Examiner's position that the comparison of Inventive Example 6 to Comparative Examples 15-17 is not a proper side by side comparison for the following reasons:

Although Inventive Example 6 and Comparative Examples 15-17 comprise equal amounts of HDPE (50 part by weight), it is noted that Comparative Examples 15-17 comprise a 30/20 mixture of EVA and modified EVA while Inventive Example 6 comprises 50 parts of EVA (unmodified). Further differences between the inventive and comparative examples include:

- a. Acryl silane utilized in the Inventive Example 6 in amounts of 0.3 parts is not present in Comparative Examples 15-17
- b. Inventive Example 6 comprises 0.5 parts phosphorous antioxidant, while Comparative Examples 15-17 do not contain phosphorous antioxidant.
- c. Inventive Example 6 and Comparative Examples 15-17 contain varying amounts of phenolic antioxidant and cross-linking agent, i.e., Inventive Example 6 contains 2 parts and 3 parts of phenolic antioxidant and cross-linking agent, respectively, while Comparative Examples 15-17 contain 3 parts and 4 parts of phenolic antioxidant and cross-linking agent.

Further it is noted that the present claims recite that the composition comprises 30 to 250 parts metallic hydrate, 1-20 parts zinc sulfide, 0.3 to 10 parts of an organo-functional coupling agent, and 5 parts zinc sulfide,. However, Inventive Example 6 comprises 30 parts of a specific metal hydrate, magnesium hydrate and 0.3 parts of specific organo-functional coupling compound, acryl silane. Thus, given that the claims recite a generic metal hydrate and coupling agent, and given that Inventive Example 6 contains a specific metal hydrate, i.e. magnesium

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hydrate and specific silane coupling agent, i.e., acryl silane, Inventive Example 6 is not commensurate in scope with the scope of the present claims.

Finally, as noted above, Inventive Example 6 contains singular amounts of zinc sulfide, silane coupling agent, and magnesium hydrate while the present claims recite amounts of 30 to 250 parts, 1 to 20 parts, and 0.3 to 10 parts of each respectively.

As set forth in MPEP 716.02(d), whether unexpected results are the result of unexpectedly improved results or a property not taught by the prior art, “objective evidence of nonobviousness must be commensurate in scope with the claims which the evidence is offered to support”. In other words, the showing of unexpected results must be reviewed to see if the results occurred over the entire claimed range, *In re Clemens*, 622 F.2d 1029, 1036, 206 USPQ 289, 296 (CCPA 1980). Applicants have not provided data to show that the unexpected results do in fact occur over the entire claimed range of metal hydrate, zinc sulfide, and silane coupling agent.

Conclusion

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALEXANDER C. KOLLIAS whose telephone number is (571)-270-3869. The examiner can normally be reached on Monday-Friday, 8:00 AM -5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571)-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/A. C. K./

Examiner, Art Unit 1796

/Vasu Jagannathan/

Supervisory Patent Examiner, Art Unit 1796